Dynasylan®

Product Information

Dynasylan® 1401

2-Aminoethyl-3-aminopropyl(methyldimethoxysilane)

PRODUCT DESCRIPTION

Dynasylan® 1401 is a bifunctional organosilane possessing reactive amino groups and hydrolyzable inorganic methoxysilyl groups.

The dual nature of its reactivity allows Dynasylan® 1401 to bind chemically to both inorganic materials (e.g. glass, metals, fillers) and organic polymers (e.g. thermosets, thermoplastics and elastomers), thus functioning as an adhesion promoter, surface modifier and as a reactant for product modification.

Dynasylan® 1401 is a clear yellow liquid with an amine-like odor. It is soluble in alcohols and aliphatic or aromatic hydrocarbons.

Typical Properties

Property	Unit	Value
Boiling Point (1013 hPa) DIN 51751	°C	≤254
Chemical Name		N-(2-Aminoethyl)-3-aminopropylmethyldimethoxysilane
Density (20 °C) DIN 51757	g/cm³	~0.98
Flash Point DIN EN ISO 2719	°C	≤90
Viscosity (20 °C) DIN 53015	mPa·s	~7

The data represents typical values (no product specification)

TYPICAL APPLICATIONS

Dynasylan® 1401 can be used in many applications.

Examples are:

- additive for cold-curing phenolic and furan foundry resins to improve the flexural strength of the sand-resin composites while maintaining the shelf life of the resin over long periods
- starting material in the synthesis of amino-functional silicones
- additive to phenolic resin binders for mineral fiber insulating materials
- primer for additive to sealants and adhesives
- additive and/or primer for improving the adhesion of paints and coatings to the substrate

BENEFITS & ADVANTAGES

Important product effects that can be achieved through the use of Dynasylan® 1401 include:

- improved mechanical properties, e.g. strength, impact strength and modulus of elasticity
- improved moisture and corrosion resistance
- improved electrical properties, e.g. dielectric constant, volume resistivity

Dynasylan® 1401 can also improve processing properties such as

- adhesion

DOSAGE

In the presence of water, the methoxy groups of Dynasylan® 1401 hydrolyze to form reactive silanol groups which can bond to a variety of inorganic substrates. The organophilic diamino group of Dynasylan® 1401 can react with a suitable polymer.

The hydrolysis of Dynasylan® 1401 takes place autocatalytically. The pH of the hydrolysate is about 10-11.

Dynasylan® 1401 may be used with such polymers as phenolic, furan resins and silicones.

Dynasylan® 1401 can undergo reactions with ketones or ester solvents. The silane or silanized substrates can react with carbon dioxide to form the corresponding carbonates or carbamates, respectively. Product modifications are possible through co-condensation with polysiloxanes (textile auxiliaries).

HANDLING & PROCESSING

Before considering the use of Dynasylan® products please read its Safety Data Sheet (SDS) thoroughly for safety and toxicological data as well as for information on proper transportation, storage and use.

The Safety Data Sheet is available upon request from your local representative, customer service or from Evonik Operations GmbH, Product Safety Department, E-MAIL sds-hu@evonik.com.

PACKAGING

Dynasylan® 1401 is supplied in 200 kg drums.

SHELF LIFE

In the unopened container Dynasylan® 1401 has a shelf life of at least 12 months.

Registration Listings	
Registry	**Status**
Australia (AIIC)	Yes
Canada (DSL)	Yes
China (IECSC)	Yes
EU (EINECS/ELINCS)	Yes
EU (REACH)	Yes
Japan (ENCS)	Yes
South Korea (KECL)	Yes
Philippines (PICCS)	Yes
USA (TSCA)	Yes

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